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PATENT

REMARKS

The Office Action dated July 31, 2006 has been received and considered. In this response, claims 1, 26, 29, 41, and 43 have been amended. Support for the amendments may be found in the specification and drawings as originally filed. Reconsideration of the outstanding rejections in the present application is respectfully requested based on the following remarks.

Obviousness Rejection of Claims 1, 2, 7, 9, 34, 42 and 43

At page 3 of the Office Action, claims 1, 2, 7, 9, 34, 42 and 43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks (U.S. Patent No. 6,139,197). This rejection is respectfully traversed.

Independent claim 1 presently recites the features of:

determining if a predetermined criteria is met by a first representation of the display data, wherein the first representation of the display data includes a first plurality of display streams to be transmitted to a first plurality of display devices;
selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria; and
compressing the first display stream in response to selecting the first display stream.

Independent claims 42 and 43 presently recite the features of:

a set of instructions to manipulate said one or more processors to:
determine if a predetermined criteria is met by a first representation of the display data, wherein the first representation of the display data includes a first plurality of display streams to be transmitted to a first plurality of display devices;
select a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria; and
compress the first display stream in response to selecting the first display stream.

With respect to claims 1, 42, and 43, the Office Action acknowledges that Banks "fails to disclose the plurality of streams being sent to a plurality of display devices" but asserts that because Banks discloses "sending a stream from a server to a client via a network," it would have been obvious "to send a plurality of streams to a plurality of clients since a network hosts a plurality of clients." *Office Action*, p. 3. Regardless of whether Banks suggests sending a

plurality of streams to a plurality of clients, Banks fails to disclose or suggest the claimed features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1 and the similar features of "select a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compress the first display stream in response to selecting the first display stream" as recited by claims 42 and 43.

Accordingly, Banks fails to disclose or suggest each and every feature recited by claims 1 and 41, as well as the additional features recited by claims 2, 7, and 9 at least by virtue of their dependency from claim 1. Moreover, these dependent claims recite additional non-obvious features. For example, claim 9 recites the additional features of "wherein the predetermined criteria is determined to be met when each display stream of the first plurality of display streams is expected to be transmitted in a manner that allows for real time simultaneous display of each of the first plurality of display streams." The Office Action asserts that this feature is disclosed by Banks because Banks allegedly teaches "wherein the criteria is the bandwidth and frame rate which enables simultaneous display one the client." *Office Action*, p. 4. However, as acknowledged by the Office Action, Banks is directed to providing only one stream to one client. Thus, Banks fails to disclose, or even suggest, that a video stream is provided for simultaneous display as more than one client is not contemplated, much less that a predetermined criteria is determined to be met when each display stream of a plurality of display streams is expected to be transmitted in a manner that allows for real time simultaneous display of each of the plurality of display streams.

Claim 34 depends from independent claim 33, which is rejected based on a combination of Banks, Bixby, and Putzolu. Accordingly, the rejection of claim 34 based on a Banks only is improper as claim 34 inherits the features of claim 33 by virtue of its dependency.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 1, 2, 7, 9, 42, and 43 is improper at this time. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

Obviousness Rejection of Claims 10-12, 15-18, 22, 49-52, and 54

At page 4 of the Office Action, claims 10-12, 15-18, 22, 49-52, and 54 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Bixby (U.S. Patent No. 6,792,047). This rejection is respectfully traversed.

Claims 10-12, 15-18, and 22 depend from claim 1. As discussed above, Banks fails to disclose or suggest at least the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1. The Office Action does not assert that Bixby discloses these features, nor in fact are these features disclosed by Bixby. Accordingly, the proposed combination of Banks and Bixby fails to disclose the additional features of claims 10-12, 15-18, and 22 at least by virtue of their dependency from claim 1. Moreover, these claims recite additional features not disclosed or suggested by the cited references. For example, claim 12 recites the features of "determining, for each display stream in the first plurality of display streams, whether an actual transmission time for a video frame matches a predicted transmission time." The Office Action asserts that Bixby teaches transmitted data "must be delivered to ensure that jitter is within the PCR time limits" and further asserts that "jitter is the difference between actual and estimated transmission times." *Office Action*, p. 4. The Applicant respectfully disagrees and submits that jitter is directed to individual data packets, and is not directed to the transmission of a video frame. Thus, the concern for ensuring jitter is within PCR time limits disclosed by Bixby is not the same as or equivalent to determining whether an actual transmission time for a video frame matches a predicted transmission time as provided by claim 12.

Independent claim 49 recites the features of:

determining whether a transmission of a data stream having a plurality of multimedia channels is expected to meet a predetermined criteria;

compressing at least one of the multimedia channels in the data stream to generate a first compressed data stream when the transmission of the data stream is not expected to meet a predetermined criteria; and

determining whether a transmission of the first compressed data stream is expected to meet the predetermined criteria.

With respect to claims 49-52 and 54, the Office Action states "claims . . . 49-52 and 54 differ from claim 1 in that claims . . . 49-52, and 54 further require matching a predicted transmission time with an actual transmission time." *Office Action*, p. 4. It is respectfully submitted that, as evident from claim 49 reproduced above, that the requirement of matching a predicted transmission time with an actual transmission time is not present in the claimed subject matter of claim 49.

Further, it is noted that the Office Action fails to address the particular combination of features recited by claim 49 and therefore fails to establish a *prima facie* case of obviousness with respect to claims 49-52 and 54. *See M.P.E.P.* § 2143. Moreover, the proposed combination of Banks and Bixby fail to disclose or suggest each and every feature recited by claims 49-52 and 54. To illustrate, neither Banks nor Bixby discloses or suggests compressing at least one multimedia channel of a plurality of multimedia channels in a data stream to generate a compressed data stream and then determining whether the resulting compressed data stream meets a predetermined criteria as provided by claim 49. Accordingly, the combination of Banks and Bixby necessarily fails to disclose or suggest these features.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 10-12, 15-18, 22, 49-52, and 54 is improper at this time. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

Obviousness Rejection of Claims 23-26, 28, 30-32, 35, 36, 39-41, 44-48 and 53

At page 5 of the Office Action, claims 23-26, 28, 30-32, 35, 36, 39-41, 44-48 and 53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Bixby and further in view of Girod (U.S. Patent No. 6,480,541). This rejection is respectfully traversed.

Independent claim 1 presently recites the features of:

determining if a predetermined criteria is met by a first representation of the display data, wherein the first representation of the display data includes a first plurality of display streams to be transmitted to a first plurality of display devices;
selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria; and
compressing the first display stream in response to selecting the first display stream.

Independent claims 42 and 43 recite similar features. As discussed above, neither Banks nor Bixby discloses or suggests at least the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1 and the similar features recited by claims 42 and 43. With respect to the similar feature of "selecting the stream using a predefined selection method" as previously recited by claim 26, the Office Action relies on the passage of Girod at col. 7, line 50 – col. 8, line 14 and asserts that "wherein the predefined method is selecting the stream or video that uses the highest bit rate tolerable by the channel." *Office Action*, p. 6.

For ease of reference, the cited passage of the Girod reference is reproduced below in its entirety:

The coding apparatus 100 of FIG. 2 is arranged to allow the coding and storage of the same video signal at a variety of different bit rates. In particular, the video signal is coded using different resolutions of quantization in each of coders 100a, 100b, 100c, respectively. As shown, the output of coder 100a is stored in memory unit 140a, the output of coder 100b is stored in memory unit 140b, and the output of coder 100c is stored in memory unit 140c. Once the video signal is coded and stored, the stored signals may be used as part of a video-on-demand server to provide the same video signal at any of a number of different bit rates. The manner in which the data is coded and stored allows for the bit rate to be changed during a transmission of the video signal by switching the output from, for example, memory 140a to memory 140b.

Multiple coders 100a, 100b, 100c are each designed for coding data with a different level of compression, so that each provides video data for transmission at a different bit rate. In general, the greater the number of quantization levels used by the coder, the higher the quality of the transmitted image, and the higher the bit rate. Thus, in the tradeoff between image quality and transmission bandwidth, the quality of a transmission channel often determines the bandwidth which will allow real time decoding and display at the receiving end of the transmission. If a variety of bit rates are available, handshaking commands between the destination and the source can be used to select the highest bit rate tolerable by the transmission channel (for real time decoding), thereby providing the best possible image quality.

In the FIG. 2 embodiment, coder 100a codes the video signal with a coarseness of quantization which results in its output having the lowest bit rate of the signals provided by the coders. Similarly, the signal output by coder 100b has a less

coarse quantization which produces the next higher bit rate, and the signal output
by coder 100c has an even less coarse quantization than coder 100b, which results
in the highest bit rate. Thus, if a transmission channel being used allows only a
low bit rate, the decoder sends a request for the coded version of the video signal
having the lowest bit rate (i.e. the signal coded by coder 100a).
After the three bitstreams have been coded by coders 100a, 100b, 100c and stored
in memory units 140a, 140b, and 140c, respectively, they may be arranged as part
of a video-on-demand server, depicted schematically in FIG. 3.
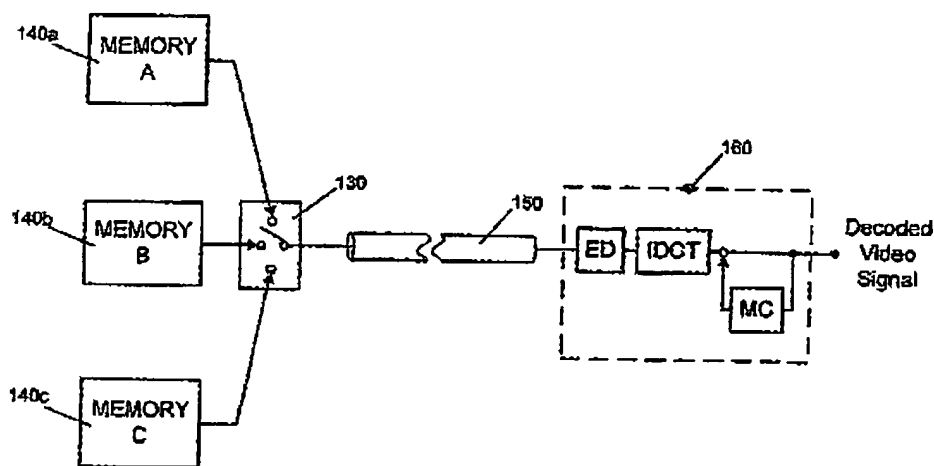
Girod, col. 7, line 42 – col. 8, line 18.

Figures 2 and 3 of Girod also are reproduced below for ease of reference:
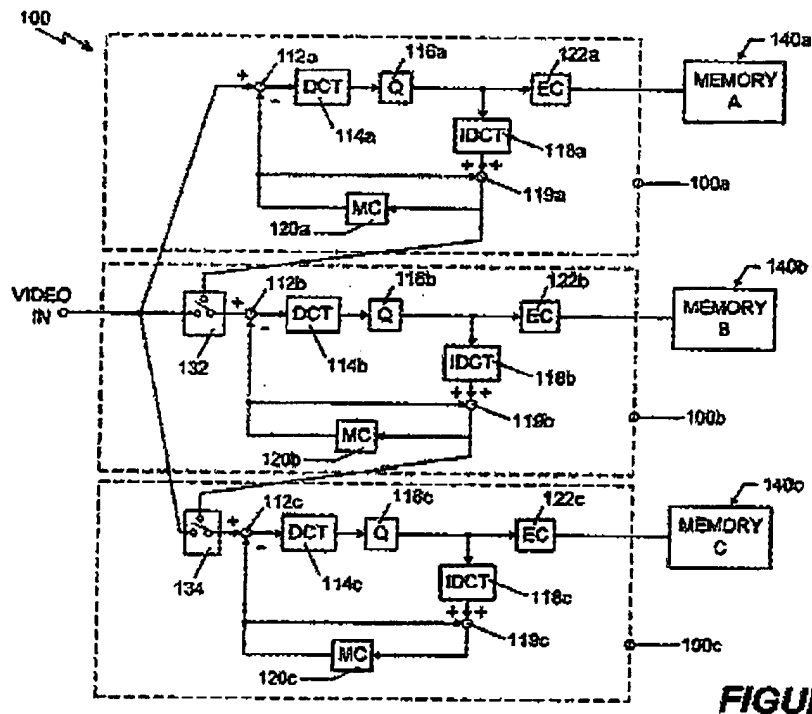
FIGURE 2

Girod, Figure 2

FIGURE 3

Girod, Figure 3

As illustrated by Figure 2 and as disclosed by the cited passage of Girod, the *same video in* signal is encoded at different levels of compression at coders 100a, 100b and 110c. Each compressed version of the *video in* signal output by the coders 100a, 100b and 100c is then stored in memories 140a, 140b and 140c, respectively. *See Girod,* col. 8, lines 15-16. As illustrated by Figure 3 of Girod, the capacity of the transmission channel 150 is determined and a selector (switch 130) "directs the output bitstream from the appropriate memory unit [one of memories 140a, 140b or 140c] to the receiver [decoder 160] over the transmission channel [150]." *See Id.,* col. 8, lines 33-43. As provided by Girod, the entire video sequence is transmitted from the same memory unit if the bit rate tolerable by a particular receiver is unchanged for the duration of the transmitted video signal, whereas the transmission of the video sequence may switch between the memory units if the bit rate tolerable by the receiver changes during the duration of the transmitted video signal. *See Id.,* col. 8, line 53 to col. 9, line 5. Thus, Girod discloses selecting a single data stream for transmission to a receiver based on the bit rate tolerable by the receiver, where the effective data size of a particular segment of the single transmitted data stream can be changed by **selecting between already compressed versions of** the particular segment from memories 140a, 140b or 140c. Thus, as acknowledged by the Office, the system of Girod "**compresses the display stream or video and then selects one of the compressed streams based upon the available bandwidth of the channel.**" *Final Office Action*

mailed January 25, 2005, p. 4 (emphasis added). In contrast, claim 1 provides that the compression of the first display stream is in response to selecting the first display stream, and further provides that the first display stream is selected when it is determined that the first representation of the display data [which includes the first display stream] does not meet the predetermined criteria. Accordingly, Girod also fails to disclose or suggest the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1, as well as the similar features recited by claims 42 and 43.

Thus, as Banks, Bixby and Girod each fail to disclose or suggest the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1, as well as the similar features recited by claims 42 and 43, the proposed combination of Banks, Bixby and Girod fails to disclose or suggest each and every feature recited by claims 1, 42, and 43, as well as claims 23-26, 28, 30-32 and 44-48 at least by virtue of their dependency from one of claims 1 or 43. Moreover, these claims recite additional features not disclosed or suggested by the cited references.

Claims 35 and 36, which depend from independent claim 33, and claims 39-41, which depend from independent claim 37, are identified as rejected under the combination of Banks, Bixby and Girod, whereas independent claims 33 and 37 are identified as rejected under the combination of Banks, Bixby and Putzolu. As claims 35 and 36 have narrower scopes than claim 33 by virtue of their dependency from claim 33 and as claims 39-41 have narrower scopes than claim 37 by virtue of their dependency from claim 37, the rejection of claims 35, 36 and 39-41 in view of a combination of references that do not include the same references under which claims 33 and 37 are rejected is improper.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 23-26, 28, 30-32, 35, 36, 39-41, 44-48 and 53 is improper. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

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Obviousness Rejection of Claims 13 and 14

At page 7 of the Office Action, claims 13 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Bixby and further in view of Norsworthy (U.S. Patent No. 6,144,402). This rejection is respectfully traversed.

As noted above, Banks and Bixby fail to disclose or suggest a number of features recited by claim 1. The Office Action does not assert that Norsworthy discloses or suggest those claim features absent from the disclosures of Banks and Bixby, nor in fact does Norsworthy disclose or suggest these claim features. Accordingly, the proposed combination of Banks, Bixby and Norsworthy fails to disclose or suggest each and every feature recited by claim 1, as well as the additional features recited by claims 13 and 14 at least by virtue of their dependency from claim 1. Moreover, these dependent claims recite additional non-obvious features.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 13 and 14 is improper. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

Obviousness Rejection of Claims 19-21

At page 8 of the Office Action, claims 19-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Bixby et al., in further view of Keren (U.S. Patent Application No. 2001/0026591). This rejection is respectfully traversed.

As noted above, Banks and Bixby fail to disclose or suggest a number of features recited by claim 1. The Office Action does not assert that Keren discloses or suggest those claim features absent from the disclosures of Banks and Bixby, nor in fact does Keren disclose or suggest these claim features. Accordingly, the proposed combination of Banks, Bixby and Keren fails to disclose or suggest each and every feature recited by claim 1, as well as the additional features recited by claims 19-21 at least by virtue of their dependency from claim 1. Moreover, these dependent claims recite additional non-obvious features.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 19-21 is improper. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

U.S. App. No.: 09/823,646

Obviousness Rejection of Claims 27, 29, 33, 37 and 38

At page 9 of the Office Action, claims 27, 29, 33, 37 and 38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Bixby and further in view of Putzolu (U.S. Patent No. 6,584,509). This rejection is respectfully traversed.

Claims 27 and 29 depend from claim 1. As noted above, Banks and Bixby fail to disclose or suggest at least the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1. The Office Action asserts that the passage of Putzolu at col. 7, lines 1-15 "teaches that a round robin scheme allows all classes to have equal opportunities to access the links" and therefore it would have been obvious "to implement the selection method disclosed by Putzolu in order to obtain an apparatus that operates more efficiently by being able to select streams in a fair and equal manner." *Office Action*, p. 9. The Applicant respectfully disagrees. Putzolu discloses the use of a round robin scheme for scheduling the transmission of packets from "classes" over a network link. Putzolu fails to disclose or suggest that the round robin method can be applied to select a display stream of a plurality of display streams when a representation of display data including the plurality of display streams does not meet a predetermined criteria, nor does Putzolu disclose or suggest that a display stream is compressed in response to its selection. Accordingly, Putzolu fails to disclose or suggest at least the features of "selecting a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria" and "compressing the first display stream in response to selecting the first display stream" as recited by claim 1. The proposed combination of Banks, Bixby and Putzolu therefore fails to disclose or suggest each and every feature recited by claims 27 and 29 at least by virtue of their dependency from claim 1.

Claim 33 recites the features of:

determining, for each display stream of a plurality of display streams, if an estimated transmit time meets an actual transmit time within a predetermined tolerance;
selecting a first stream of the plurality of display streams based on a prioritization method;
selecting one of a plurality of compression methods to be applied to the first stream; and

repeating each of the above steps until the step of determining indicates the actual transmit time is within the predetermined tolerance of the estimated transmit time.

With respect to the claimed features of "selecting one of a plurality of compression methods to be applied to the first stream," the Office Action asserts that the passage of Bixby at col. 32, lines 8-15 disclose "wherein the different methods are . . . the padding, stuffing and insertion of frames." *Office Action*, p. 10. One of ordinary skill in the art will readily appreciate that the "padding, stuffing and insertion of freeze B and P frames and pre-encoded black I frames" as taught by Bixby are not compression methods because they do not compress the data stream by reducing the amount of data in the data stream. Rather, these methods do just the opposite: they add data ("insert", "stuff," and "pad") to the data stream. Accordingly, contrary to the assertions of the Office Action, Bixby fails to disclose, or even suggest, the features of "selecting one of a plurality of compression methods to be applied to the first stream" as recited by claim 33. Banks and Putzolu also fail to disclose or suggest at least these features.

With respect to the claimed features of "repeating each of the above steps until the step of determining indicates the actual transmit time is within the predetermined tolerance of the estimated transmit time" as recited by claim 33, the Office Action asserts that the passage of Bixby at col. 28, lines 12-16 disclose "wherein a plurality of steps are repeated until the jitter is minimized." *Office Action*, p. 10. The cited passage of Bixby reads as follows: "In either case, when transmitting an MPEG TS, the data must be delivered to ensure that any jitter is within the limit that the MPEG standard imposes on the PCR time values. The PCR values must be accurate to within 20 cycles of a 27 MHz decoder clock." Bixby, col. 28, lines 12-16. Contrary to the assertions of the Office Action, neither this cited passage nor any other passage of Bixby discloses or suggests repeating the steps of selecting a display stream and selecting a compression method to apply to the selected display stream "until the jitter is minimized." Accordingly, Bixby also fails to disclose or suggest at least the features of "repeating each of the above steps until the step of determining indicates the actual transmit time is within the predetermined tolerance of the estimated transmit time" as recited by claim 33. Banks and Putzolu also fail to disclose at least these features.

Claim 37 recites the features of:

determining, for each multimedia channel in the multimedia data stream, whether an actual transmission time for a multimedia channel matches a predicted transmission time within a predetermined tolerance;

selecting, using a predefined selection method, a first multimedia channel; and

reducing an amount of data associated with the first multimedia channel when it is determined that the actual transmission time of the first multimedia channel exceeds the predicted transmission time by an amount greater than the predetermined tolerance.

The Office Action rejects claim 37 based on its rejection of claims 19 and 33. *Office Action*, p. 10. It is noted that claim 19 is rejected under a combination of Banks, Bixby and Keren, whereas claim 37 is rejected under a combination of Banks, Bixby and Putzolu. Accordingly, the Office's reliance on its rejection of claim 19 with respect to the rejection of claim 37 is improper as the rejection of claim 19 includes a reference not included in the rejection of claim 37. Moreover, as discussed above, Banks, Bixby and Putzolu fail to disclose or suggest selecting a first multimedia channel, much less selecting a first multimedia using a predefined selection method as provided by claim 37. Banks, Bixby and Putzolu also fail to disclose or suggest the claimed features of "reducing an amount of data associated with the first multimedia channel when it is determined that the actual transmission time of the first multimedia channel exceeds the predicted transmission time by an amount greater than the predetermined tolerance." Accordingly, the proposed combination of Banks, Bixby and Putzolu fails to disclose or suggest each and every feature recited by claim 37, as well as the additional features recited by claim 38 at least by virtue of its dependency from claim 37.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 27, 29, 33, 37 and 38 is improper. Reconsideration and withdrawal of this rejection therefore is respectfully requested.

Conclusion

The Applicant respectfully submits that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.
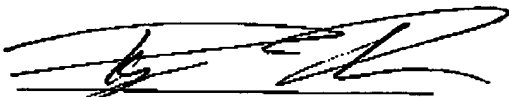
It is believed no additional fees are due, but if the Commissioner believes additional fees are due, the Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-1835.

Respectfully submitted,

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29 August 2006
Date